

**CLASSIFICATION:**

**UNCLASSIFIED**

[illegible]

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This is a continuing program that consolidates the design, fabrication and integration of Naval Electronic Warfare (EW) threat simulators for increased managerial emphasis and coordination. These simulator development efforts provide realistic Developmental and Operational Test and Evaluation (DT&E/OT&E) environments to test Tri-Services EW systems and defensive tactics. These projects develop former Soviet and Free-World Anti-Air and Anti-Ship weapon systems simulators in accordance with the Services requirements.

W0602 Project (formally E0602) directly supports the Test and Evaluation resource requirements for all Naval Air Electronic Warfare (EW) development programs to include multi-spectral situational awareness and countermeasures. Programs in development and future programs include: Advanced Anti-Radiation Guided Missile (AARGM), ALR-67 (v) 2 and (v) 3, Integrated Defensive Electronic Countermeasures Suite (IDECM) ALQ-214, AAR-47 (v) 2 and the AAR-47 (v) 3, AVR -2, Advanced 6" Expendable, Advanced Strategic Tactical Expendable (ASTE), ALQ-144A, Directed Infrared Countermeasures (DIRCM), EA-6B Improved Capability Program (ICAP III), LR700 and the Low Band Transmitter (LBT). This program also supports Joint Service EW systems with initial operational capability in the mid to late 2000's.

The R0672 Project (formally E0672), Effectiveness of Navy EW Systems (ENEWS), is a Department of the Navy (DON) unique project that supports Test and Evaluation of Ships EW efforts. ENEWS provides T&E for surface and subsurface shipboard systems and tactics in digitally modeled battle scenarios at the component, fully integrated single ship, multi-ship and full-up multi-platform battle group levels. ENEWS also provides a secure anechoic closed loop T&E facility specifically designed to test shipboard systems at the stand alone subsystem or fully integrated systems level. The last and largest portion of this project addresses the flyable Infrared and Radio Frequency simulators flown on specially configured NP-3D aircraft to provide at-sea open air T&E for systems and tactics. All ENEWS assets are developed, operated and maintained by the Naval Research Laboratory (NRL), Washington, DC.

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**Exhibit R-2, RD TEN Budget Item Justification**  
(Exhibit R-2, page 1 of 18)

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2004</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDTE&amp;E, N / BA-6</b>		PROGRAM ELEMENT NUMBER AND NAME 0604256N Threat Simulator Development			PROJECT NUMBER AND NAME W0602 ECHO			
COST (\$ in Millions)			FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
Project Cost			<b>13.321</b>	<b>13.998</b>	<b>11.379</b>	<b>11.530</b>	<b>11.697</b>	<b>11.936</b>
RDTE&E Articles Qty								
<b>Not Applicable</b>								
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> The objective of this project is development of necessary simulation facilities and approaches to allow determination of the effectiveness of Electronic Warfare (EW) in real world engagement situations and to support the introduction of modern, effective systems into Naval Aviation. The heavy use of test resources by all Services demonstrates the importance of these assets. The Navy has been very successful in executing all of its major programs, and to date has had no major technical problems.</p> <p>The EW Environment Simulation (ECHO) project is unique in that it is the only program within the Department of Defense (DOD) which develops and provides Naval anti-air warfare threat assets for Testing and Evaluation (T&amp;E) and is a critical part of the Office of the Secretary of Defense (OSD) Test Resource Master Plan. The OSD Master Plan employs many ECHO project resources for planning, analysis, testing and verification of airborne EW equipment.</p> <p>This project directly supports the Test and Evaluation resource requirements for all Naval Air Electronic Warfare (EW) development programs to include multi-spectral situational awareness and countermeasures. Programs in development and future programs include: Advanced Anti-Radiation Guided Missile (AARGM), ALR-67 (v) 2 and (v) 3, Integrated Defensive Electronic Countermeasures Suite (IDECM) ALQ-214, AAR-47 (v) 2 and the AAR-47 (v) 3, AVR -2, Advanced 6" Expendable, Advanced Strategic Tactical Expendable (ASTE), ALQ-144A, Directed Infrared Countermeasures (DIRCM), EA-6B Improved Capability Program (ICAP III), LR700 and the Low Band Transmitter (LBT). This program also supports Joint Service EW systems with initial operational capability in the mid to late 2000's.</p> <p>This project provides for the development of an Integrated Air Defense T&amp;E capability to be fielded at each of the three sites comprising the Navy's Tri-Center complex: Naval Air Warfare Center Weapons Division, China Lake and Point Mugu in CA, and Naval Air Warfare Center Aircraft Division, Patuxent River, MD.</p> <p><b>NOTE: Beginning October 1, 2003 (FY04) - PROGRAM ELEMENT 0604256N Threat Simulator Development - PROJECT UNIT E0602 - ELEX W/F ENVIR SIMULATION (ECHO) was transferred from NAVAIRSYSCOM PMA-272 TO NAVAIRSYSCOM AIR 5.0C under PROJECT UNIT W0602 - ELEX W/F ENVIR SIM (ECHO).</b></p>								

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Exhibit R-2, RDTE&E Budget Item Justification  
(Exhibit R-2, page 2 of 18)

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2004</b>																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0604256N Threat Simulator Development	PROJECT NUMBER AND NAME W0602 ECHO																	
<b>B. Accomplishments/Planned Program</b>  <hr style="border: 0; border-top: 1px solid black; margin: 10px 0;"/>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">Ground Based IR Stimulator</td><td style="width: 10%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>0.715</td><td>1.175</td><td></td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px; min-height: 60px;">Complete Ground Based IR Stimulator. Complete fabrication. Integrate into the Range and perform initial operational capabilities (IOC) testing.</div>					Ground Based IR Stimulator		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		0.715	1.175		RDT&E Articles Quantity				
Ground Based IR Stimulator		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		0.715	1.175																
RDT&E Articles Quantity																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">Advanced Man Portable Air Defense Systems</td><td style="width: 10%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>0.533</td><td>0.750</td><td>0.750</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px; min-height: 60px;">Continue Advanced Man Portable Air Defense Systems. Procure additional manpad seekers, install and test at the Navy open air range.</div>					Advanced Man Portable Air Defense Systems		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		0.533	0.750	0.750	RDT&E Articles Quantity				
Advanced Man Portable Air Defense Systems		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		0.533	0.750	0.750															
RDT&E Articles Quantity																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">1V2 IR Alert/Response System</td><td style="width: 10%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>2.371</td><td>0.450</td><td></td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px; min-height: 60px;">Complete 1V2 IR Alert/Response System. Complete installation of hardware and software. Conduct initial operational capabilities testing at the Navy open air range.</div>					1V2 IR Alert/Response System		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		2.371	0.450		RDT&E Articles Quantity				
1V2 IR Alert/Response System		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		2.371	0.450																
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<b>B. Accomplishments/Planned Program</b>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">SIMVAL</td><td style="width: 10%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>0.100</td><td>0.100</td><td>0.100</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					SIMVAL		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		0.100	0.100	0.100	RDT&E Articles Quantity				
SIMVAL		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		0.100	0.100	0.100															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px;">Continue SIMEVAL (Simulator Evaluation). Conduct and evaluate measurements and document results to provide customers with confidence in simulator performance.</div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">Radar and Weapon Simulator</td><td style="width: 10%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>0.484</td><td>0.525</td><td>0.525</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					Radar and Weapon Simulator		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		0.484	0.525	0.525	RDT&E Articles Quantity				
Radar and Weapon Simulator		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		0.484	0.525	0.525															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px;">Continue Radar and Weapon Simulator Updates. Perform intelligence based updates to threat radar and weapon system simulators.</div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">Missile/Gun</td><td style="width: 10%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>0.779</td><td>0.450</td><td>0.450</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					Missile/Gun		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		0.779	0.450	0.450	RDT&E Articles Quantity				
Missile/Gun		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		0.779	0.450	0.450															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px;">Continue Missile and Gun System Simulator Updates. Perform intelligence based updates to threat missile and gun system software flyout models.</div>																			

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<b>B. Accomplishments/Planned Program</b>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 40%;">Reprogrammable Early Warning Acquisition Radar</td><td style="width: 10%;"></td><td style="width: 10%;">FY 03</td><td style="width: 10%;">FY 04</td><td style="width: 10%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>0.290</td><td>0.525</td><td></td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					Reprogrammable Early Warning Acquisition Radar		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		0.290	0.525		RDT&E Articles Quantity				
Reprogrammable Early Warning Acquisition Radar		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		0.290	0.525																
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px;">Complete Reprogrammable Early Warning (EW) Acquisition (ACQ) Radar. Complete fabrication and perform IOC testing of laboratory EW/ACQ Threat Radar System.</div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 40%;">Advanced Threat Simulator</td><td style="width: 10%;"></td><td style="width: 10%;">FY 03</td><td style="width: 10%;">FY 04</td><td style="width: 10%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td></td><td>0.800</td><td>1.285</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					Advanced Threat Simulator		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost			0.800	1.285	RDT&E Articles Quantity				
Advanced Threat Simulator		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost			0.800	1.285															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px;">FY2004 - Initiate Advanced Threat Simulator. Conduct design trade-off analysis and begin hardware and software development. FY2005 - Continue Advanced Threat Simulator. Continue hardware and software development.</div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 40%;">1VM RF Alert/Response</td><td style="width: 10%;"></td><td style="width: 10%;">FY 03</td><td style="width: 10%;">FY 04</td><td style="width: 10%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>0.543</td><td>2.535</td><td>2.229</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					1VM RF Alert/Response		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		0.543	2.535	2.229	RDT&E Articles Quantity				
1VM RF Alert/Response		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		0.543	2.535	2.229															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px;">FY2003 - FY2004 - Continue 1 vs M RF Alert Response. Continue hardware and software development. FY2005 - Continue 1 vs M RF Alert Response. Continue hardware and software development. Begin installation and interface with 1V1 and 1V2 systems.</div>																			

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<b>B. Accomplishments/Planned Program</b>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">Validation</td><td style="width: 10%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Efforts/Subtotal Cost</td><td></td><td style="text-align: center;">0.400</td><td style="text-align: center;">0.400</td><td style="text-align: center;">0.400</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					Validation		FY 03	FY 04	FY 05	Accomplishments/Efforts/Subtotal Cost		0.400	0.400	0.400	RDT&E Articles Quantity				
Validation		FY 03	FY 04	FY 05															
Accomplishments/Efforts/Subtotal Cost		0.400	0.400	0.400															
RDT&E Articles Quantity																			
<div>Continue Validation. Generate Validation Reports using Simulator Evaluation (SIMEVAL) results and forward for Director Test and Evaluation (DOT&amp;E) approval.</div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">ECHO Technical &amp; Engineering support</td><td style="width: 10%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Efforts/Subtotal Cost</td><td></td><td style="text-align: center;">3.119</td><td style="text-align: center;">2.765</td><td style="text-align: center;">2.642</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					ECHO Technical & Engineering support		FY 03	FY 04	FY 05	Accomplishments/Efforts/Subtotal Cost		3.119	2.765	2.642	RDT&E Articles Quantity				
ECHO Technical & Engineering support		FY 03	FY 04	FY 05															
Accomplishments/Efforts/Subtotal Cost		3.119	2.765	2.642															
RDT&E Articles Quantity																			
<div>Continue ECHO Technical &amp; Engineering support. Provide Program Management, Systems Engineering and Requirements support at all three Navy Electronic Warfare Test and Evaluation (EWT&amp;E) facilities.</div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">Advanced Multiple-Emitter Simulator Advanced Modulation</td><td style="width: 10%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Efforts/Subtotal Cost</td><td></td><td></td><td style="text-align: center;">0.750</td><td style="text-align: center;">0.925</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					Advanced Multiple-Emitter Simulator Advanced Modulation		FY 03	FY 04	FY 05	Accomplishments/Efforts/Subtotal Cost			0.750	0.925	RDT&E Articles Quantity				
Advanced Multiple-Emitter Simulator Advanced Modulation		FY 03	FY 04	FY 05															
Accomplishments/Efforts/Subtotal Cost			0.750	0.925															
RDT&E Articles Quantity																			
<div>FY2004 - Initiate Advanced Multiple-Emitter Simulator Advanced Modulation. Develop design and interface specifications and begin hardware and software development. FY2005 - Complete Advanced Multiple-Emitter Simulator Advanced Modulation. Complete development, install and perform initial operational capabilities testing at the Navy laboratory facilities.</div>																			

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Exhibit R-2a, RDTEN Project Justification  
(Exhibit R-2a, page 6 of 18)

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<b>B. Accomplishments/Planned Program</b>																			
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<div style="border: 1px solid black; min-height: 60px; margin-top: 10px;"></div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">InfraRed/Ultra Violet (IR/UV) Mobile Stimulator</td><td style="width: 10%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td style="text-align: center;">0.800</td><td></td><td></td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					InfraRed/Ultra Violet (IR/UV) Mobile Stimulator		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		0.800			RDT&E Articles Quantity				
InfraRed/Ultra Violet (IR/UV) Mobile Stimulator		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		0.800																	
RDT&E Articles Quantity																			
<div style="border: 1px solid black; min-height: 60px; margin-top: 10px;"></div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;">IR Target Array</td><td style="width: 10%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td style="text-align: center;">2.752</td><td></td><td></td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>					IR Target Array		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		2.752			RDT&E Articles Quantity				
IR Target Array		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		2.752																	
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1V1 IR Alert/Response System		FY 03	FY 04	FY 05														
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<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 33%;">Real/Time Electronic Combat Range</td><td style="width: 15%;"></td><td style="width: 15%;">FY 03</td><td style="width: 15%;">FY 04</td><td style="width: 15%;">FY 05</td></tr><tr><td>Accomplishments/Effort/Subtotal Cost</td><td></td><td>0.200</td><td></td><td></td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></table>				Real/Time Electronic Combat Range		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		0.200			RDT&E Articles Quantity				
Real/Time Electronic Combat Range		FY 03	FY 04	FY 05														
Accomplishments/Effort/Subtotal Cost		0.200																
RDT&E Articles Quantity																		
<div style="border: 1px solid black; height: 60px; margin-top: 10px;"></div>																		

R-1 SHOPPING LIST - Item No.

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2004</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0604256N Threat Simulator Development	PROJECT NUMBER AND NAME W0602 ECHO		

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	15.993	14.155	14.637
Current BES/President's Budget	13.321	13.998	11.379
Total Adjustments	-2.672	-0.157	-3.258
Summary of Adjustments			
SBIR Assessment	-0.477		
Rate Adjustments/Efficiencies/Undist Reductions		-0.157	0.033
Execution Adjustments	-2.195		
Inflation Adjustment			-0.036
Manpower Rate Adjustment			-0.022
Technical Adjustment			-3.233
Subtotal	-2.672	-0.157	-3.258

Schedule: Not Applicable

Technical: Not Applicable.

R-1 SHOPPING LIST - Item No. 140

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Exhibit R-2a, RD TEN Project Justification  
(Exhibit R-2a, page 9 of 18)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2004</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0604256N Threat Simulator Development	PROJECT NUMBER AND NAME W0602 ECHO
<p><b>D. OTHER PROGRAM FUNDING SUMMARY:</b> Not Applicable</p> <p><b>E. ACQUISITION STRATEGY:</b> Not Applicable</p>		

R-1 SHOPPING LIST - Item No. 140

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# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2004</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N / BA-6</b>	0604256N, Threat Simulator Development					R0672, Effectiveness of Navy Electronic Warfare Systems (ENEWS)		
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Project Cost	<b>12,404</b>	<b>13,694</b>	<b>12,487</b>	<b>12,660</b>	<b>12,888</b>	<b>13,045</b>	<b>13,416</b>	
RDT&E Articles Qty								

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

The objective of the Effectiveness of Navy Electronic Warfare (EW) Systems (ENEWS) Project is the development and application of necessary simulation assets to determine the effectiveness of EW for navy ships in simulated real-world engagement situations. The project primarily supports the introduction of modern, effective shipboard and offboard EW systems, and tactics for the Surface Navy. The heavy use of ENEWS resources by Naval Sea Systems Command (NAVSEA), Operational Test and Evaluation Force (OPTEVFOR), Special Operations and other EW Research Development Test and Evaluation (RDT&E) agencies speaks to the overall importance of this project. The project provides support for EW system Design Engineering Test (ET), Development Test (DT), Operational Test (OT), and the development of utilization tactics. Its quick reaction capabilities have had great impact on crisis situations such as the Lebanon and Libyan crises, Iran Harpoon threat, Persian Gulf crisis and Operation Desert Shield/Storm. Builder, an ENEWS digital modeling tool that was developed and is maintained to support surface EW Test and Evaluation (T&E) has migrated outside the T&E arena and is being used by special forces and carrier battle groups as a mission planning tool. Simulation Display (SIMDIS) is another ENEWS modeling tool that was developed to support T&E and has been adopted by most Department of Defense (DoD) T&E and training ranges to provide visualization of T&E and training scenarios. The primary threat to surface ships is Anti-Ship Capable Missile (ASCM) systems. The ENEWS Project is unique in that it is the only project within the Department of Defense (DOD) dedicated to developing and providing realistic ASCM assets to test and evaluate the effectiveness of shipboard EW systems and tactics against these type threats. The ENEWS Project is a critical part of the Office of the Secretary of Defense (OSD) Test Resource Master Plan. This plan employs many of the ENEWS assets for planning, analysis, testing and verification of shipboard and offboard EW systems, techniques and tactics. As part of its normal activities, ENEWS provides Development Test and Evaluation (DT&E), Operations Test and Evaluation (OT&E) and Follow-on Operations Test and Evaluation (FOT&E) support to the Surface Navy for all ship classes. DT, OT and FOT&E support includes AN/SLQ-32 Surface Electronic Warfare Improvement Program (SEWIP), R17.OX (NULKA), Rapid Anti-ship Integrated Defense System (RAIDS), all MK245 Giant tests, advanced Infrared (IR) decoys, decoy placement (Littoral), ship IR signature and Radar Cross Section (RCS) measurement of DDG-51, LPD-17, DD-21 and PC class ships, High Power Microwave (HPM) program, and other ship self-defense initiatives, including test and evaluation of Future Naval Capability (FNC) process. In addition, ENEWS assets are regularly employed to test the effectiveness of North Atlantic Treaty Organization (NATO) ships' EW systems in joint allied exercises.

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2004</b>												
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0604256N, Threat Simulator Development	PROJECT NUMBER AND NAME R0672, Effectiveness of Navy Electronic Warfare Systems (ENEWS)												
<b>(U) B. Accomplishments/Planned Program</b>														
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 20%;">FY 03</th><th style="width: 20%;">FY 04</th><th style="width: 30%;">FY 05</th></tr></thead><tbody><tr><td>Simulator Hardware Upgrades</td><td style="text-align: center;">0.846</td><td style="text-align: center;">0.896</td><td style="text-align: center;">0.844</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px; min-height: 60px;">Provides simulator upgrades to ENEWS both flyable and shore based Infrared (IR) and Radio Frequency (RF) simulators. This task includes upgrades to the ALQ-170 Multi-Threat simulator.</div>				FY 03	FY 04	FY 05	Simulator Hardware Upgrades	0.846	0.896	0.844	RDT&E Articles Quantity			
	FY 03	FY 04	FY 05											
Simulator Hardware Upgrades	0.846	0.896	0.844											
RDT&E Articles Quantity														
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 20%;">FY 03</th><th style="width: 20%;">FY 04</th><th style="width: 30%;">FY 05</th></tr></thead><tbody><tr><td>Simulator Software Upgrades</td><td style="text-align: center;">0.563</td><td style="text-align: center;">0.705</td><td style="text-align: center;">0.700</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px; min-height: 60px;">Provides software upgrades to existing ENEWS flyable and shore based simulations required due to either hardware upgrade of the computer or new intelligence information. This task includes upgrades to the ALQ-170 Multi-Threat and VICTOR simulators.</div>				FY 03	FY 04	FY 05	Simulator Software Upgrades	0.563	0.705	0.700	RDT&E Articles Quantity			
	FY 03	FY 04	FY 05											
Simulator Software Upgrades	0.563	0.705	0.700											
RDT&E Articles Quantity														
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 20%;">FY 03</th><th style="width: 20%;">FY 04</th><th style="width: 30%;">FY 05</th></tr></thead><tbody><tr><td>Simulator Characterization</td><td style="text-align: center;">0.111</td><td style="text-align: center;">0.145</td><td style="text-align: center;">0.123</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px; min-height: 60px;">Provides characterization of IR and RF simulators as part of the periodic checks on simulator performance and to collect performance data to be used in validation reports. This includes the characterization of six simulators annually.</div>				FY 03	FY 04	FY 05	Simulator Characterization	0.111	0.145	0.123	RDT&E Articles Quantity			
	FY 03	FY 04	FY 05											
Simulator Characterization	0.111	0.145	0.123											
RDT&E Articles Quantity														

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2004</b>												
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0604256N, Threat Simulator Development	PROJECT NUMBER AND NAME R0672, Effectiveness of Navy Electronic Warfare Systems (ENEWS)												
<b>(U) B. Accomplishments/Planned Program</b>														
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 20%;">FY 03</th><th style="width: 20%;">FY 04</th><th style="width: 30%;">FY 05</th></tr></thead><tbody><tr><td>Simulator Maintenance</td><td style="text-align: center;">1.137</td><td style="text-align: center;">1.009</td><td style="text-align: center;">1.000</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px; min-height: 60px;">Provides required simulator maintenance to ensure that the hardware simulators are available for customer testing. Preventative maintenance, troubleshooting and repairs are performed as required. This includes annual maintenance on 21 simulators.</div>				FY 03	FY 04	FY 05	Simulator Maintenance	1.137	1.009	1.000	RDT&E Articles Quantity			
	FY 03	FY 04	FY 05											
Simulator Maintenance	1.137	1.009	1.000											
RDT&E Articles Quantity														
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 20%;">FY 03</th><th style="width: 20%;">FY 04</th><th style="width: 30%;">FY 05</th></tr></thead><tbody><tr><td>Simulator Control Panels</td><td style="text-align: center;">0.206</td><td style="text-align: center;">0.295</td><td style="text-align: center;">0.202</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px; min-height: 60px;">Supports the development and maintenance of all simulator control panels, including IR FOXTROT, IR VICTOR, NOVEMBER II, and MEIR simulator control panels.</div>				FY 03	FY 04	FY 05	Simulator Control Panels	0.206	0.295	0.202	RDT&E Articles Quantity			
	FY 03	FY 04	FY 05											
Simulator Control Panels	0.206	0.295	0.202											
RDT&E Articles Quantity														

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2004</b>												
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0604256N, Threat Simulator Development	PROJECT NUMBER AND NAME R0672, Effectiveness of Navy Electronic Warfare Systems (ENEWS)												
<b>(U) B. Accomplishments/Planned Program</b>														
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 20%;">FY 03</th><th style="width: 20%;">FY 04</th><th style="width: 30%;">FY 05</th></tr></thead><tbody><tr><td>Laboratory Facilities</td><td style="text-align: center;">1.110</td><td style="text-align: center;">1.000</td><td style="text-align: center;">1.000</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; height: 60px; margin-top: 10px; padding: 5px;">Provides maintenance and upgrades to the (indoor laboratory) and outdoor land-based facilities required to perform testing of surface electronic warfare systems.</div>				FY 03	FY 04	FY 05	Laboratory Facilities	1.110	1.000	1.000	RDT&E Articles Quantity			
	FY 03	FY 04	FY 05											
Laboratory Facilities	1.110	1.000	1.000											
RDT&E Articles Quantity														
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 20%;">FY 03</th><th style="width: 20%;">FY 04</th><th style="width: 30%;">FY 05</th></tr></thead><tbody><tr><td>Simulation Threat Repository</td><td style="text-align: center;">0.029</td><td style="text-align: center;">0.010</td><td style="text-align: center;">0.010</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; height: 60px; margin-top: 10px; padding: 5px;">Provides management and access control of the classified document collection and simulations.</div>				FY 03	FY 04	FY 05	Simulation Threat Repository	0.029	0.010	0.010	RDT&E Articles Quantity			
	FY 03	FY 04	FY 05											
Simulation Threat Repository	0.029	0.010	0.010											
RDT&E Articles Quantity														
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 20%;">FY 03</th><th style="width: 20%;">FY 04</th><th style="width: 30%;">FY 05</th></tr></thead><tbody><tr><td>Simulation Instrumentation</td><td style="text-align: center;">0.225</td><td style="text-align: center;">0.455</td><td style="text-align: center;">0.233</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; height: 60px; margin-top: 10px; padding: 5px;">Provides for the development, procurement, repair and maintenance of digital data collection and analysis systems.</div>				FY 03	FY 04	FY 05	Simulation Instrumentation	0.225	0.455	0.233	RDT&E Articles Quantity			
	FY 03	FY 04	FY 05											
Simulation Instrumentation	0.225	0.455	0.233											
RDT&E Articles Quantity														

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2004</b>												
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0604256N, Threat Simulator Development	PROJECT NUMBER AND NAME R0672, Effectiveness of Navy Electronic Warfare Systems (ENEWS)												
<b>(U) B. Accomplishments/Planned Program</b>														
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	FY 03	FY 04	FY 05											
Simulation Validation	0.575	0.475	0.430											
RDT&E Articles Quantity														
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 20%;">FY 03</th><th style="width: 20%;">FY 04</th><th style="width: 30%;">FY 05</th></tr></thead><tbody><tr><td>Electronic Attack/Electronic Support Simulations</td><td style="text-align: center;">0.457</td><td style="text-align: center;">0.523</td><td style="text-align: center;">0.545</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"><p>Provides improvements and intelligence upgrades to ASCM Digital Models to include fly-out models, NULKA and other off-board decoys including chaff models. Also, supports maintenance of the Threat Database to provide threat intelligence for the development of Test and Evaluation digital scenarios.</p></div>				FY 03	FY 04	FY 05	Electronic Attack/Electronic Support Simulations	0.457	0.523	0.545	RDT&E Articles Quantity			
	FY 03	FY 04	FY 05											
Electronic Attack/Electronic Support Simulations	0.457	0.523	0.545											
RDT&E Articles Quantity														
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 20%;">FY 03</th><th style="width: 20%;">FY 04</th><th style="width: 30%;">FY 05</th></tr></thead><tbody><tr><td>Program Management</td><td style="text-align: center;">0.445</td><td style="text-align: center;">0.481</td><td style="text-align: center;">0.400</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"><p>Provides technical management functions in support of the ENEWS project; engineering and technical support required for the overall efforts of ASCM Simulator and Digital Models development to meet DT/OT testing requirements, development of detailed test resource requirements and providing an interface between N-912, ONR and other ENEWS oversight activities. Also provides technical leadership to the Navy Surface Anti-Ship Cruise Missile Threat Simulator Validation Working Group (SVWG).</p></div>				FY 03	FY 04	FY 05	Program Management	0.445	0.481	0.400	RDT&E Articles Quantity			
	FY 03	FY 04	FY 05											
Program Management	0.445	0.481	0.400											
RDT&E Articles Quantity														

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**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 15 of 18)

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2004</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0604256N, Threat Simulator Development	PROJECT NUMBER AND NAME R0672, Effectiveness of Navy Electronic Warfare Systems (ENEWS)	
<b>(U) B. Accomplishments/Planned Program</b>			
	FY 03	FY 04	FY 05
Classified Program	6.700	7.700	7.000
RDT&E Articles Quantity			
<div>Classified Program</div>			



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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2004</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDTE, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0604256N, Threat Simulator Development	PROJECT NUMBER AND NAME R0672, Effectiveness of Navy Electronic Warfare Systems (ENEWS)

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	13.898	13.849	14.548
Current BES/President's Budget	12.404	13.694	12.487
Total Adjustments	-1.494	-0.155	-2.061
Summary of Adjustments			
SBIR Assessment	-0.157		
Rate Adjustments			-0.021
Execution Adjustmetn	-1.337		
Inflation Adjustments			-0.040
Manpower Rate Adjustment			-0.022
Technical Adjustment			-1.978
Cong. Rescission/Adjustments/Undist Reductions		-0.155	
Subtotal	-1.494	-0.155	-2.061

(U) Schedule: Not Applicable

(U) Technical: Not Applicable

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Exhibit R-2a, RDTE Project Justification  
(Exhibit R-2a, page 17 of 18)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2004</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-6</b>	PROGRAM ELEMENT NUMBER AND NAME 0604256N, Threat Simulator Development	PROJECT NUMBER AND NAME R0672, Effectiveness of Navy Electronic Warfare Systems (ENEWS)
<p>(U) D. OTHER PROGRAM FUNDING SUMMARY: None</p> <p>(U) E. ACQUISITION STRATEGY: Not Applicable</p>		

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